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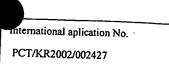
PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

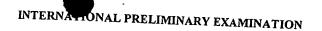
(PCT Artcle 36 and Rule 70)

Applicant's or agent's file reference				
OP020135	FOR FURTHER ACTION SeeNotificationofTransmittalofInternationalPreliminary Examination Report (Form PCT/IPEA/416)			
PCT/KD2002/002425	ternational filing date(day/month/year) Priority date (day/month/			
International Patent Classification (IPC) or national classification and IPC IPC7 G01N 33/574				
Applicant BIOINFRA INC. et al				
	ation report has been prepared by this International Preliminary Examining Authority			
2. This REPORT consists of a total of	4 sheets, including this cover sheet.			
amended and are the basis for the	by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been s report and/or sheets containing rectifications made before this Authority (see Rule ninistrative Instructions under the PCT).			
report contains indications relating	to the following items:			
I X Basis of the report				
II Priority				
III Non-establishment of opi	on with regard to novelty, inventive step and industrial applicability			
V X Reasoned statement unde citations and explanations VI Certain documents cited	Article 35(2) with regard to novelty, inventive step or industrial applicability; upporting such statement			
VII Certain defects in the inter	ational annihilation			
VIII Certain observations on the				
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te of submission of the demamd	Date of completion of this report			
06 NOVEMBER 2003 (06.11.2003)	29 ЛИLY 2004 (29.07.2004)			
me and mailing address of the IPEA/KR	Authorized officer			
Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon Republic of Korea				
csimile No. 82-42-472-7140 Telephone No. 82-42-481-8155				
PCT/IPEA/409 (cover sheet) (July 1998)	10. 02-42-401-8133			





1. With regard to the elements of the international application:* the international application as originally filed the description: pages 1-24	I. Basis of the report		1 C 17 K (2002/002427
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Pages 1-24 as originally file			
Pages 1-24 as originally file	the international	application as originally filed	
pages	X the description:	- ,	
pages	pages 1-24		
the claims: pages 35-29 pages	pages		
the claims: pages 25-29 pages 3.0 pages 5.0 pages 5.0 pages 6.0 pages 6.0 pages 7.0 p	pages	, filed with the letter of	, filed with the demand
pages , as amended (together with any statument) under Article pages , filed with the letter of 18/06/2004			
pages	pages 25-29		
pages 30		as amended (togeth	her with any statment) under A riels 1
the drawings: pages page	pages 30		, filed with the demand
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2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in whe international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following languageEnglish which the language of a translation furnished for the purposes of international search (under Rule 23.1(b)). The language of publication of the international application(under Rule 48.3(b)). The language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 are or 55.3). 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:	pages	filed with the letter of	, filed with the demand
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International aplication No. PCT/KR2002/002427

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applical citations and explanations supporting such statement	
statement under Article 35(2) with regard to novelty invention	
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1.	Statement		
	Novelty (N)	Claims Claims	1-21 YES
	Inventive step (IS)	Claims	NO
		Claims	YES
	Industrial applicability (IA)	Claims	1-21 NO
		Claims	YES
_			, NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following document from the International Search Report (ISR). D1: KR 2000-0052802 (patent family member: EP 934409)

1. Novelty & Inventive step

Objects of the present invention are to provide a system (claims 1~11) and a method (claims 12~20) for detection of cancer, by generating a serum proteome standard by an image mining technique, and to provide biomarkers specific to breast cancer (claim 21). The present invention (claims 1 & 12) comprises input means/step for inputting serum proteome; proteome standard production means/step; proteome comparison means/step; disease analysis means/step; and output means/step.

D1 is considered to represent the most relevant state of the art for the subject matter of present invention with respect to identifying and characterizing changes in proteomes by a computer-based system, which aligns a new proteome image with the master composite image that is corresponding to the proteome standard of the present invention. It relates to methods and computer systems for analyzing cell proteomes to characterize proteins that are up- or down-regulated under different conditions, such as under abnormal(diseased) or compound-treated conditions.

- Continued in Supplemental Box

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of:

Box V

However, the subject matters of claims 1 & 12 of the present invention are different from what D1 discloses in that an image mining technique is introduced to the proteome analyses of the present invention, wherein the proteome standard is generated by an image mining tool, which employs a genetic algorithm, a support vector machine, and a fuzzy rule-based classification means is also used for analysis and prognosis of disease states. None of the available documents, either alone or in combination, discloses such an introduction of an image mining technique to proteome analysis, which appears non-obvious to a person skilled in the art.

Claims 2-11 and claims 13-20 are dependent on claim 1 and claim 12, respectively. Therefore, the system to which claims 1-11 relate and the method to which claims 12-20 do are believed to be novel and to involve an inventive step as compared with prior arts fulfilling the requirements set forth in Article 33(2)&(3) PCT.

The subject matter of claim 21 is biomarkers comprising a novel proteome pattern specific to diagnosis of breast cancer, which has been generated by the method of the present invention. Claim 21 thus complies with the requirements set forth in Article 33(2)&(3) PCT.

2. Industrial applicability

Present invention relates to a computer-based system, a method and biomarkers for detection of cancer. There is no reason to negate the industrial applicability of this invention. Consequently, claims 1-21 appear to meet the requirements of Article 33(4) PCT.

Fuzzy technique; and

a rule-based classification step of arranging and normalizing the results obtained at the data mapping step, and thus generating a final rule base.

21. (amended) A biomarker or biomarkers for diagnosis of breast cancers, comprising a proteome pattern, wherein said proteome pattern is one or more selected from spots listed in Table 1.

22. (deleted)